ABSTRACT OF THE DISCLOSURE

A method and apparatus for providing programmable memory functions for bi-directional cell traffic in a switch platform are provided, wherein a parameterized bi-directional FIFO unit controls cell traffic in a switch platform using a first and a second unidirectional FIFO buffer. The first and second unidirectional FIFO buffers each comprise asynchronous read and write ports. A cell size and a word size of the first and second unidirectional FIFO buffers are programmable. The bi-directional FIFO unit is coupled to write at least one cell from and read at least one cell to at least one asynchronous transfer mode (ATM) interface, at least one frame relay interface, at least one voice interface, and at least one data interface. As such, the first unidirectional FIFO buffer is coupled to write at least one cell from, and the second unidirectional FIFO buffer is coupled to read at least one cell to an ATM interface, a frame relay interface, a voice interface, and a data interface. The first unidirectional FIFO buffer is coupled to read at least one cell to at least one switch, and the second unidirectional FIFO buffer is coupled to write at least one cell from at least one switch, wherein the switch handles cells from sources having a number of bandwidths. The switch is coupled to route the at least one cell between an OC12 trunk line and at least one service module. The service module is coupled to provide the cell to at least one service subscriber using T1, E1, T3, E3, OC3, and OC 12 ports.